

Lionville Laboratory, Inc. VOA ANALYTICAL DATA PACKAGE FOR TNUHANFORD B99-093 H1705

DATE RECEIVED: 02/27/02

LVL LOT # :0202L077

CLIENT ID	LVL #	1	MTX	PREP #	COLLECTION	EXTR/PREP	analysis
B143Y8	001	M1		001377015	02/25/02	37/3	00/07/00
			-	02LVJ015	02/25/02	N/A	03/07/02
B143Y8	001 MS	M1	80	02LVJ015	02/25/02	N/A	03/07/02
B143Y8	001 MSD	M1	80	02LVJ015	02/25/02	n/a	03/07/02
B143Y9	002	M1	80	02LVJ015	02/25/02	n/a	03/07/02
B14400	003	Ml	80	02LVJ015	02/25/02	n/a	03/07/02
B14401	004	M1	80	02LVJ015	02/25/02	n/a	03/07/02
B14403	005	M1	80	02LVJ017	02/25/02	n/a	03/08/02
B14403	005	N1	80	02LVJ017	02/25/02	n/a	03/08/02
B14404	006	M1	80	02LVJ017	02/25/02	n/a	03/08/02
B14404	006	Nl	80	02LVJ017	02/25/02	n/a	03/08/02
B14405	007	M1	so	02LVJ015	02/25/02	N/X	03/07/02
AB QC:							
VBLKNF	MB1		s	02LVJ015	N/A	n/a	03/07/02
vbl knf	MB1 B8		S	02LVJ015	N/A	N/A	03/07/02
VBLKNG	MB1		S	02LVJ017	N/A	n/a	03/08/02

Jay 20-02



EDMC



Analytical Report

Client: TNU-HANFORD B99-093

W.O. #: 11343-606-001-9999-00

LVL#: 0202L077

Date Received: 02-27-02

SDG/SAF #: H1705/B99-093

GC/MS VOLATILE

The set of samples consisted of seven (7) solid samples collected on 02-25-02.

The samples and their associated QC samples were analyzed according to criteria set forth in Lionville Laboratory OPs based on SW 846 Method 8260A for client specified Volatile target compound Carbon Tetrachloride on 03-07,08-02.

The following is a summary of the QC results accompanying these sample results and a description of any problems encountered during their analyses:

- 1. All results presented in this report are derived from samples that met LvLI's sample acceptance policy.
- 2. The required holding time for analysis was met.
- 3. The samples required a medium level analysis because they contained high levels of target compound.
- 4. Six (6) of forty-two (42) surrogate recoveries were outside EPA QC limits. Samples B14403 and B14404 were re-analyzed and reported. There was no impact on the target compound.
- 5. All matrix spike recoveries were within EPA QC limits.
- 6. All blank spike recoveries were within EPA QC limits.
- 7. Internal standard areas were outside QC limits for Samples B14403 and B14404. The samples were re-analyzed and reported. There was no impact on the data.
- 8. I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hard-copy data package has been authorized by the Laboratory Manager or a designee, as verified by the following signature.

Michael Taylor

Date

President

Lionville Laboratory Incorporated

pef\group\data\voa\tnu-hanford\0202-077.doc

The results presented in this report relate only to the analytical testing and conditions of the samples at receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 11 pages.

GLOSSARY OF VOA DATA

ABBREVIATIONS

BS	=	Indicates blank spike in which reagent grade water is spiked with the CLP matrix spike solutions and carried through all the steps in the method. Spike recoveries are reported.
BSD	=	Indicates blank spike duplicate.
MS	=	Indicates matrix spike.
MSD	=	Indicates matrix spike duplicate.
DL	-	Suffix added to sample number to indicate that results are from a diluted analysis.
NA	=	Not Applicable.
DF	-	Dilution Factor.
NR	-	Not Required.
SP, Z		Indicates Spiked Compound.



GLOSSARY OF VOA DATA

DATA QUALIFIERS

- U = Compound was analyzed for but not detected. The associated numerical value is the estimated sample quantitation limit which is included and corrected for dilution and percent moisture.
- Indicates an estimated value. This flag is used under the following circumstances: 1) when estimating a concentration for tentatively identified compounds (TICs) where a 1:1 response is assumed; or 2) when the mass spectral data indicate the presence of a compound that meets the identification criteria but the result is less than the specified detection limit but greater than zero. For example, if the limit of detection is 10 ug/L and a concentration of 3 ug/L is calculated, it is reported as 3J.
- B = This flag is used when the analyte is found in the associated blank as well as in the sample. It indicates possible/probable blank contamination. This flag is also used for a TIC as well as for a positively identified TCL compound.
- E = Indicates that the compound was detected beyond the calibration range and was subsequently analyzed at a dilution.
- D = Identifies all compounds identified in an analysis at a secondary dilution factor.
- l = interference.
- NO = Result qualitatively confirmed but not able to quantify.
- N = Indicates presumptive evidence of a compound. This flag is only used for tentatively identified compounds (TICs), where the identification is based on a mass spectral library search. It is applied to all TIC results. For generic characterization of a TIC, such as chlorinated hydrocarbon, the N code is not used.
- X = This flag is used for a TIC compound which is quantified relative to a response factor generated from a daily calibration standard (rather than quantified relative to the closest internal standard).
- Y = Additional qualifiers used as required are explained in the case narrative.



TECHNICAL FLAGS FOR MANUAL INTEGRATION

Manual quan modifications or integrations are performed routinely to improve the data quality for a variety of technical reasons. Documentation of these modifications should be clear and concise. The following "flags" are used to indicate the technical reasons for quan modifications:

- MP Missed Peak: manually added peak not found by automatic quan program.
- PA Peak Assignment: quan report was changed to reflect correct peak assignment.
- RI Routine Integration: routine integrations are performed for some analytes that are consistently integrated improperly by the automatic integration programs. Examples are the dichlorobenzene isomers on the VOA packed column and benzo(b)fluoranthene/benzo(k)fluoranthene which are poorly resolved on the BNA column.
- SP Split Peak: the automatic integration improperly split the peak; a manual integration was performed to get the correct area.
- CB Coelution/Background: peak was manually integrated to eliminate contribution from coeluting compounds, background signal, or other interference.
- PI Proper Integration: a peak with poor or inconsistent integration (e.g., excessive tail) was properly integrated manually.



Report Date: 03/19/02 16:22

Lionville Laboratory, Inc.

Volatiles By GC/MS, Special List

Client: TNUHANFORD B99-093 H1705 Work Order: 11343606001 Page: 1a RFW Batch Number: 0202L077 Cust ID: B143Y8 **B143Y8** B143Y8 B143Y9 B14400 B14401 001 001 MS 001 MSD 002 Sample RFW#: 003 004 Information Matrix: SOLID SOLID SOLID SOLID SOLID SOLID 100 D.F.: 100 100 95.2 105 111 UG/KG UG/KG Units: UG/KG UG/KG UG/KG UG/KG MED MED MED MED MED Level: MED 106 111 ¥ 114 * 108 욯 109 ¥ 112 1,2-Dichloroethane-d4 87 ¥ 82 92 86 88 ¥ 88 * Toluene-d8 * Surrogate 83 ¥ 81 ¥ 74 86 83 ¥ 83 ¥ Recovery Bromofluorobenzene 101 ŧ 710000 1500000 440000 580000 121 * Carbon Tetrachloride Cust ID: B14403 B14403 B14404 B14404 B14405 VBLKNF 005 005 006 Sample RFW#: 006 007 02LVJ015-MB1 Information Matrix: SOLID SOLID SOLID SOLID SOLID SOIL D.F.: 2.16 2.16 2.11 2.11 205 2.00 Units: UG/KG UG/KG UG/KG UG/KG UG/KG UG/KG Level: MED MED MED MED MED MED REPREP REPREP 1,2-Dichloroethane-d4 뫔 145 * 131 148 114 * 109 * 104 Surrogate Toluene-d8 152 * % 126 155 * % 103 * 87 9 91 Recovery Bromofluorobenzene 21 * % 27 * % 15 * % 41 * % 82 87 Carbon Tetrachloride

420 J

840

830

3000000

620 U

460 J

^{*=} Outside of EPA CLP OC limits.

Lionville Laboratory, Inc.

Volatiles By GC/MS, Special List

Report Date: 03/19/02 16:22 Client: TNUHAMFORD B99-093 H1705 Work Order: 11343606001 Page: 2a RFW Batch Number: 0202L077 Cust ID: VBLKNF BS VBLKNG sample RFW#: 02LVJ015-MB1 02LVJ017-MB1 Information SOIL Matrix: SOIL 2.00 2.00 D.F.: UG/KG UG/KG Units:

	Level:	MED		MED		
	1,2-Dichloroethane-d4	98	¥	106	ł	
Surrogate	Toluene-d8	90	¥	89	*	
Recovery	Bromofluorobenzene	85	*	86	*	
========		=====	==fl==	===== ==	==fl	=======f1=======f1=====f1=====f1=======f1
Carbon Tet:	rachloride	94	¥	620	ប	

^{*=} Outside of EPA CLP QC limits.

Lionville Laboratory Use Onl

Custody Transfer Record/Lab Work Request Page 1 of 1

O	VLI ₂
	Company of the Street Street

02021077

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

	,									_ (-) _				$\overline{}$						1				
Client II	٢٢.	Honfor	399-09	93	<u> </u>	_	Retrige	etor #	1 7	1	10000	- A (1)	2.554	୍ରିବନ୍ତ	o Ya	1. 3 . 1. 10.	Sir S	Sales and Co	38854A	1.500	i de La Carlo	്യങ്	11.2	112.6
Est. Final Pro	j. Ser	npling Date				المبد	#/Type	Container	Liquid	1	130	1 32 5 5 5 30 7 5	160 100 H			-	1			4				20.0
Project #		11343-606	- 001-999	1-00		_			Solit.	lAq	y god	102.4E	A.S.	12.00	4		3.2			100.04		A STATE	and of	
Project Conta	cVP)	one #				100	Volume	ł	Liquid		avea	žě c	7				<i>.</i>		10.00	Approximately 1				
Lionville Lab	orato	y Project Mariage	Y <u></u>	05	· · ·				Solid	250		<u></u>		**			1 00 E		. # 				18.0	
ac SPEC		Or 2 led	TAT	. 30 days			Preserv	etives			OPG	ANIC		100		-51	INC	BG				منع دروي د		30,000
							ANALY		_	∀		_	ę]		11								
Date Rec'd	ء کھ	17.02	Date Due	3-29-02			REQUE	STED		Ş	NA A	Pest/	Herb	12 22 2			Metai	ਠੁ	1:7					7.1
MATRIX	<u> </u>				Matr	ix							1		Llonv	ile La	borate	ry Us	Only	,	1	· · · ·		
CODES:	Leb	O#-	nt ID/Description		QC Chos	I	Matrix	Date	Tîme	Z X	1		ļ											
S - Soll SE - Sediment	l ID	·	mi ibrosscriptnor	'	(~)	'	terdift s.v.	Collected	Collected	3 to 25														
SO - Sofid SL - Sludge	<u></u>				MS I	MSD		<u> </u>		0 1		<u> </u>	<u> </u>											
W - Water O - Oil	001	B143Y	8				<u> </u>	25kg	1135	×						200								1. X
A - Air DS - Drum	200	B143	19				1	l.	1143	×							ستندر					9 a. 1		
Solids DL - Drum		3 B144	00				Al an		1158	×				. (**)								i.		
Liquids L EP/TCLP	$ \infty $	BIAA	SI.	in a second			. K		12.05	×				117		37 A		i de la compo		7 %				21. PM
Wi - Wipe	00						4		12M	×								14.50		ر آراد			κ.	道 法
X - Other F - Fish	α	T = 13 = 12 Y = 1							1226	×			1 - 2 m	7 (1)	sea. 1	100	100 Sec.	1.8 1.5 1.5					34 A	13
	8					3.4			1230			176 S 8 3 2 1			61) 12.5						i			e fall en
					. 5 °0µ/ 57€55		₹. Ø., 													1. 1.	en en en			
														1	24	2.11	5. J.	V. (1)		38.7		Varyer's		
							- 1, -1, -2, -						1									A State		
Special Instruc	tions:	SAF #	B99-09	73		ATE/R	EVISIO	NS:	<u> </u>		<u></u>		<u></u>			<u></u>	Ī		Llonvil	le Labo	ratory	Use O	nly	
		Run Matrix			-			t						<u>-</u>				mples	were;			mper Res		ul was:
	/	im Matrix	άC		_			2											od 🗸 Evered .		1)	Present Ckage (t on Ox	ater At
]								3									A	rb# # _			2)	Unbrok	en on I	Outer
								4						-					334			ickage (Presen		
İ					•			7									3)	Receiv	red in G	iood	3)		(C) o	
}			A		-			5											0	r N	4)	Unbrok	en on	
			·					6									{}	Sampl roperly	es Preserv	red		emple() OC Rec		
Relinquishe by	1	Received by	Date T	ilme Rei	ilnquis by	hed	1	Received by	ł	Date	π	me		orepandi nples La					O°	r N		on Sar	npie Re	ec't
Hedex		N.L.	2/27/2	745			2000		ORI	GIN	ÁI		CO	C Recoi				Receiv	ved Witi Times	hin	c	ooler	⊕ ∘	r N
E-1COCX		N) House	87/03 O	11 9-			105 AST						NO	TES:		-	,,		0	r N		emp. 🕏	ما ا	~ •℃
			<u> </u>	[_ 11	וטק	Na .	REW	πH	15	4												

Bechtel Hanfor	rd Inc.	CI	HAIN OF CUST	ODY/S	AMPI	E ANALY	YSIS	REQUE	ST	B9	9-093-41	Page 1	of 2
Collector Rence Nielson			any Contact ginia Rohay	Telepho 372-9		•		Project Coor TRENT, SJ	dinator	Price Code	9N		rnaround
roject Designation 200-ZP-2 Passive Soil Vapor	Extraction - Other Solid	Sampl 200	ing Location West					SAF No. ROO_no?		Air Quality:		45	Days
te Chest No. ERA.	51-563	* 7.5	1562-1	and the second	COA R20ZP	DP60		Method of SI Federal Ex					
TMA/RECRA		Offsite	Property No.	dZ0	194	{		Bill of Ladiu	BAIT BILL 357	455	-8	117	
POSSIBLE SAMPLE HAZA Samples did not origin radiological controlled	area. No		Preservation	Cool 4C									
total activity associated sample/samples. Special Handling and/or's	F2.26.0(Type of Container	₽G.									
•	•		No. of Container(s)	250mL									
Cool	40	· 	Volume										<u> </u>
	Sample anal	YSIS		VOA - \$260/ (TCL) (Carbon tetrachloride) Moisture Content - D2216	}	1							
Sample No.	Matrix *	Sample Date	Sample Time					71			<i>p</i>		
B143Y8	OTHER SOLID	2-25-0	2 1135	X								1	
B143Y9	OTHER SOLID	2-25-0	12 143	Χ									1
314400	OTHER SOLID	2-25 0	12 1158	X			,						
314401-	OTHER SOLID	2-25-0	02 1205	X									
344402	OTHER SOLID			Ţ		2/25/02	RIC	J					1
CHAIN OF POSSESSIO		Sign/Pris			S	PECIAL INSTR	UCTIO	NS					Matrix *
	on a 2502	A Received By/Sto	125102	Pate/Time	4 1:	 Laboratory may ompounds found. Laboratory must 					•	halogenated	S-Gall SS-Gallings SO-Gall
elliquished By/Removed From	-68 6/10/06	₹ ₩	mainRThore	<u>ما2: 2</u>	<u>.02</u>		•						Si-Studge W = Water O-ON
e Indished by/Removed From	PU 2.26	Oz + F	~~ 4 J	Date/Time			Samp	les stored i	n Ref.#] /	ا 1 at the 3728 معرفرا			A-Ak DS-Drum Se DL-Orem Li
elinquished By/Removed From	Date/Time	Received By/Sto	"T"	Onte/Time	\neg		Shipp	ing Pacility	on <u>Z_E</u>	elingvish			T-Tiene
elinquished By/Removed From	3-27-02 CQ4	2 D	Ames 3.27	7.62 CP Date/Time	42		samp	les on Z_4	76 10 C for	r shipment.			L-Liquid V-Vegetate
rundomico pluteniosen Liqui	vav (me	Received By/Sto	ores_in 1	reicriune ·	-				P				X=Other
elinquished By/Removed From	Date/Time	Received By/Sto	ored in	Date/Time			-		-T.	≥.26.	56		1
LABORATORY Received B SECTION	Зу				itle			<u> </u>		 		Date/Time	<u>.l</u>
		_											

Bechtel Hanf	ord Inc.	CI	HAIN	OF CUST	ODY/S	AMP	LE A	NALY	SIS	RE	QUES	T		B99-	093-41	Page 2	of 2
Collector Renec Niclson		Comp	nny Cor ginia Ro	ntact	Telephor 372-9	e No.				Proje	ct Coord		Price (Code 9	N	Data Tur	J
Project Designation 200-ZP-2 Passive Soil Vap	or Extraction - Other Solid		ing Loc West	cation						SAF B99-			Air Q	uality		45 1)ays
Ice Chest No. & P.C.	.01-063		.ogboo	k No.		COA R20Z	P2DP60				oo of Sh deral Exp		ALLEY MAN	y, arr wider			
TMARECRA)		Offsite	e Prope	rty No.	MZ E	7/9	9 4	/		Bill	of Ladin	Wir Bill SS	Ng 7	65		8117	
POSSING PSAMPLE HAZ Samples did not o radiological contr total activity asso	rolled area. No		P	reservation	Cool 4C												
sample/samples. Special Handling and/o	17.7	32		e of Container	aG 1					_			_				
C00141			No.	Volume	250mL		\dashv			\dashv		-					
	SAMPLE ANAL	YSIS	1		VOA - 8260A (TCL) {Carbon tetrachloride} Moisture Content - D2216	1											
Sample No.	Matrix *	Sample Date		Sample Time								.;;		1			
B14403	OTHER SOLID	2-25-6	2	1214	X.												
B14404	OTHER SOLID	2-25-	02	1220	·X												
B14405	OTHER SOLID	2-25-	-02	1230	X												
					ļ	↓_										<u> </u>	
CHAIN OF POSSES) SION	Sign/Pri	at Nam		<u> </u>	┸┑	SPECI	AL INSTI	RÚCTIC	ONS					· · · · · · · · · · · · · · · · · · ·	<u> </u>	Matrix *
Reinquished By/Renoved From		XX Barbinto By/Si	oned in I	14 2/25/ 2 :Thore	Pate/Time 12 U 22 Z 24 Z 24 Z		** Lat	nds found. oratory mus	include	the %	Moisture d	ata às pàrt	of all hard	-	any other bi	ologenyted	S-Sall SE-Sallmool SO-Salli SO-Salli SI-Sludge W = Water O-Oil A-Alr
Relinquished By/Removed From	FRC 226.0 Date/Time 2.27.02 CR45	Received By/S	iored in	وريا نڪءَ ۽	Date/Time	She	8	amples s hipping l Collector amples o	Facility not ava n <u>2 / /</u>	on j ilab 264	<u> </u>	<i>DZ</i> nguish nipment		·			DS-Doom Sellde DL-Doom Liquida T-Times Wis-Yopa L-Liquid V-Vegatation X-Caler
Relinquished By/Removed From	n Date/Time	Received By/S	tored In	I	Date/Time					K	72	· 24	162	2			
LABORATORY Roceiv SECTION	ed By					Title										Dute/Time	
FINAL SAMPLE Dispose DISPOSITION	sal Method	<u>. </u>						Disp	need By					· · · · · · · · · · · · · · · · · · ·		Date/Time	

LIONVILLE LABORATORY INCORPORATED SAMPLE RECEIPT CHECKLIST

Purchase Order/Project:

DATE: 2.27.02

SAF#) SOW# / Release #: 899-093

Laboratory SDG #:

NOTE:	ALL ENTRIES MARKED "NO" MUST BE	EXPLAINED I	N THE COMM	IENT SECTION	V
1.	Custody seals on coolers or shipping container intact, signed and dated?	£J Yes	CJ No	□ N/A	☐ see Comment #
2.	Outside of coolers or shipping containers are free from damage?	@ Yes	□ No	□ N/A	☐ see Comment #
3.	Airbill # recorded?	□ Yes	□ No	□ N/A	☐ see Comment #
4.	All expected paperwork received (coc and other client specific: historical data, alpha/beta or other screening data as applicable)? (paperwork sealed in plastic bag and taped to inside lid)	C-Yes	□ No	□ N/A	□ see Comment #
5.	Sample containers are intact?	☐ Yes	□ No	□ N/A	C) see Comment #
6.	Custody seals on sample containers intact, signed and dated?	12 Yes	□ No	O N/A	See Comment #
7.	All samples on coc received?	Ø √es	□ No	O N/A	See Comment #
8.	All sample label information matches coc?	₽¶es	C] No	□ N/A	See Comment #
9.	Laboratory QC samples designated on coc? (QC stickers placed on bottles?)	D Yes	12190	· □N/A	☐ see Comment #
	Shipment meets LvLI Sample Acceptance Policy? (identify all bottles not within policy. See reverse side for policy)	er Yes	□ No	□ N/A	□ see Comment #
	Where applicable, bar code labels are affixed to coc?	□ Yes	□ No	Ø1N/A	☐ see Comment #
12.	coc signed and dated?	⊉ Yes	□ No	□ N/A	☐ see Comment #
13.	coc faxed or emailed to client?	□ Yes	□ No	□ N/A	see Comment #
14.	Project Manager/Client contacted concerning discrepancies? (name/date)	☐ Yes	□ No	□ N/A	☐ see Comment #

Cooler # / temp and Comments:

"ERC-01-063/ 2.6°

Laboratory Sample Custodian:

Laboratory Project Manager:

Lionville Laboratory, Inc. INORGANIC ANALYTICAL DATA PACKAGE FOR TNUHANFORD B99-093 H1705

DATE RECEIVED: 02/27/02

1.77	LOT	#	-0.20	OT. OT

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
B143Y8						·
% MOISTURE % MOISTURE % SOLIDS % SOLIDS	001 001 R 001 001 R	EP SO	021\\$S024 021\\$S024 021\\$S024 021\\$S024	02/25/02 02/25/02 02/25/02 02/25/02	03/13/02 03/13/02 03/13/02 03/13/02	03/14/02 03/14/02 03/14/02 03/14/02
B143Y9						
* MOISTURE * SOLIDS	002 002		02L%S024 02L%S024	02/25/02 02/25/02	03/13/02 03/13/02	03/14/02 03/14/02
B14400						
<pre>% MOISTURE % SOLIDS</pre>	003 003		0214S024 02146024	02/25/02 02/25/02	03/13/02 03/13/02	03/14/02 03/14/02
B14401						
* MOISTURE * SOLIDS	004 004		02L%S024 02L%S024	02/25/02 02/25/02	03/13/02 03/13/02	03/14/02 03/14/02
B14403					•	•
% MOISTURE % SOLIDS	005 005	*	02145024 02145024	02/25/02 02/25/02	03/13/02 03/13/02	03/14/02 03/14/02
B14404						
* MOISTURE * SOLIDS	006 006		02145024 02145024	02/25/02 02/25/02	03/13/02 03/13/02	03/14/02 03/14/02
B14405						
t moisture t solids	007 007		02145024 02145024	02/25/02 02/25/02	03/13/02 03/13/02	03/14/02 03/14/02



Analytical Report

Client: TNU-HANFORD B99-093 H1705

W.O.#: 11343-606-001-9999-00

LVL#: 0202L077

Date Received: 02-27-02

INORGANIC NARRATIVE

1. This narrative covers the analyses of 7 solid samples.

- 2. The samples were prepared and analyzed in accordance with the method checked on the attached glossary.
- 3. All results presented in this report are derived from samples that met LvLI's sample acceptance policy.
- 4. Sample holding times as required by the method and/or contract were met.
- 5. The replicate analyses were within the 20% Relative Percent Difference (RPD) control limit.
- 6. I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hard copy package has been authorized by the Laboratory Manager or a designee, as verified by the following signature.

Iain Daniels

Laboratory Manager

Lionville Laboratory Incorporated

3-15-0

Date

njp\i02-077

Lionville Laboratory Incorporated

WET CHEMISTRY

METHODS GLOSSARY FOR SOIL/SOLIDS SAMPLE ANALYSIS

% Ash D2216-80		
% Moisture D2216-80		ILMO4.0 (e)
% Solids D2216-80		ILMO4.0 (e)
% Volatile Solids D2216-80		
ASTM Extraction in Water D3987-81/85		
BTU D240-87		; •
CEC	9081	c
Chromium VI	3060A/7196A	
Corrosivity by coupon by pH	1110(mod) 9045C	
Cyanide, Total	9010B	ILMO4.0 (e)
Cyanide, Reactive	Section 7.3/9014	
Halides, Extractable Organic	9020B	EPA 600/4/84-008
Halides, Total	√9020B	EPA 600/4/84-008
EP Toxicity	1310A	November 1
Flash Point	1010	
Ignitability	1010 (mod.)	
Oil & Grease	9071A	•
Carbon, Total Organic	9060	Lloyd Kahn (mod)
Oxygen Bomb Prep for Anions D240-87(mod)	5050	
Petroleum Hydrocarbons, Total Recoverable	9071	EPA 418.1
pH, Soil	9045C	
Sulfide, Reactive	Section 7.3/9030B	
Sulfide	9030B(mod)	
Specific Gravity D1429-76C/	D5057-90	
Sulfur, Total	9056	
Synthetic Preparation Leach	1312	
Paint Filter	9095A	
Other: Method:		
Other: Method		

A Liquid Ramples

Lionville Laboratory Incorporated

METHOD REFERENCES AND DATA QUALIFIERS

DATA QUALIFIERS

- U = Indicates that the parameter was not detected at or above the reported limit. The associated numerical value is the sample detection limit.
- * = Indicates that the original sample result is greater than 4x the spike amount added.

ABBREVIATIONS

MB = Method or Preparation Blank.

MS = Matrix Spike.

MSD = Matrix Spike Duplicate.

REP = Sample Replicate

LC = Laboratory Control Sample.

NC = Not calculated.

A suffix of -R, -S, or -T following these codes indicate a replicate, spike or sample duplicate analysis respectively.

ANALYTICAL WET CHEMISTRY METHODS

- 1. ASTM Standard Methods.
- USEPA Methods for Chemical Analysis of Water and Wastes (USEPA 600/4-79-020).
- 3. Test Methods for Evaluating Solid Waste (USEPA SW-846).
- a. Standard Methods for the Examination of Water and Waste, 16 ed, (1983).
- b. Standard Methods for the Examination of Water and Waste, 17 ed, (1989)/18ed (1992).
- c. <u>Method of Soil Analysis</u>, Part 1, Physical and Mineralogical Methods, 2nd ed, (1986).
- d. Method of Soil Analysis, Part 2, Chemical and Microbiological Properties, Am. Soc. Agron., Madison, WI (1965).
- e. USEPA Contract Laboratory Program, Statement of Work for Inorganic Analysis.
- f. Code of Federal Regulations.

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 03/14/02

CLIENT: TNUHANFORD B99-093 H1705 MORK ORDER: 11343-606-001-9999-00 LVL LOT #: 0202L077

					Reporting	DILUTION
Sample	site id	analyte	resul <i>t</i>	UNITA	LIMIT	FACTOR
	三国も中央内的のステックとしてよりま	**************		*****	642#25425	25224444
-001	D143Y6	t Modeture	32.1	*	0.01	1.0
		t Solids	77.0	*	0.01	1.0
-002	B143X9	4 Moigture	33.5	•	0.01	1.0
		♥ Solide	46.4	ŧ	0.01	1.0
-003	B24450	+ Hoisture	39.7	•	0.01	1.0
		t Solids	60.3	*	0.01	1.0
-004	B14401	* Noisture	19.4	•	0.01	1.0
		v solide	80.2	٠	0.01	1.0
-005	B14403	* Noisture	5.4	*	0.61	1.0
		* solide	94.4	k	6.01	1,0
-606	814404	* Noisture	7.7		0.01	1.0
		t solids	91.2	•	0.01	1.0
-007	B14405	* Noisture	41.0	•	0.01	1.0
		* #olide	59.0	•	0.01	1.0

Lionville Laboratory, Inc.

INORGANICS PRECISION REPORT 03/14/02

CLIENT: THUMANPORD B99-093 H1705

LVL LOT #: 0202L077

WORK ORDER: 11343-606-001-9999-00

			THITTEN			DIFOLION
Sample	SITE ID	ANALYTE	result	REPLICATE	RPC	Factor (Rep)
F=474#	· · · · · · · · · · · · · · · · · · ·			*****	ERESHOL:	22200000000000000000000000000000000000
-001REP	B143Y9	* Moisture	22.1	22.1	0.041	, 1.0
		% Solida	77.9	77.5	6.013	1.0

		04-	04-02	. 0	9:40	SW.	F	rom	-L10		LE L	ABOR	ATO	?Y	NCOR	PORA	TED			610	2803					144	. 1		7 11	r	08	ſ		
		×3(3)	Relinquished by							Special instruct			· ·		71 A	M - Wigo		200	9	2	20 - 90 E	50 EF	XXXX	Date Rec'dc	2	200					Harry T.D.C.	0202107	onville Laboratory Use Only	
		21							Z,	actions:				807	8	500	8	83	8	<u>§</u>		ē Ē		دو	ľ	,						5	And	
		5	Received by						Rum Matrix	SAF #			1	D17400					EVE HIGH	8 AE HIG		CO		2.37.02 D	79	500	Syclast Hannah	28.74 J. J.	13-43-606-001-9799-00		Hacker	77		_
		a/87/00	Caria						30					8	1	C)		Ö	9	3		Client Wildebeription	{	Date Oue	1	1	•••	. 1	-100		90)tsn	ŀ
		2445	Tim•	·	•					099-093	:								7		i	ripilon		w				15	9.99.5	字. 字.	399-093		ğ	,
		4		 										,		*	10							3-29-02		_	3		00			THE SEC	Tra	Ì
			2 5	:							-	<u> `</u>	Ľ	-		3				99. 11.98				32		-						Ž	ns	
		0	Relinquished by	 1	ı	-	1	ı	1	2	ŀ	-	-				***				35	Z	Marty					Cyr.		; . : .~]	.	8	ब)
	₹	က	<u> </u>							† Peronalization			\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	F		Ľ				5					-	3	ا. خ	187.4	•	<u> </u>	2		Re	ļ
	ASTE	ဒ္ဓ	20		įσ. Į		μ	1	, ,	* *				[2] 						انتسا		C		REQUESTED		Preservative	Volume 1		at the const	2		350	8	
		mi i	Received by					Ì		•						- *				as bar		Deta Collected		8		2			Ī	į	-	NEY &	<u>d</u>	
	REWRIT	ORIGINA												1330	9	+10	1305	संडभ	(IH3)	1135		Cellegist		₩		•	8		ŝ	Line		FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS	Custody Transfer Record/Lab Work	
	믝	2	Date					ł	Ì					×	×	×	×	×	×	×	24	24 ×		VOA	\prod	1	150	_	l ac		_		. ₹	:
١	圆	F	7					ĺ								1								BNA	୍ଧାନା		\mathbb{R}^{n}	2		37.		8	큿	•
						1											<u>. </u>				_			Pest/ PCB	ਨ			Sec. 1				•	Re	Ì
		COC Pa	Discrepancies Between Samelas Labels and						•]		L		<u> </u>				<u>. </u>		1		L		_	Herb	Ц				17		_	ļ	quest Page.	
)	Plecord	parcie:									-				.			, ;				ٰے ا	ļ	.		- 12°	18		£.	_	İ	1SE	
		Q.	Between								_					78		_	ļ .		<u> </u>		- 3		.			交形	*	1	┼		Pag	
		9	3		1			- {	_				-	1.		Ac.	25				┞		Ligarita Laborat						_	-			-	
	•	# 55 F 25		\$	2 3 2 3	9 1	5.	Į	- # - #		-:	-	-		13	-		-	7.		-		- 1	Meta		H				100	╁	1	ġ.	
	G	5) Hecawed Wilhia Holding Times) O	4) Saraptes	31	2	ة بر ا با			동	-					+	-	-		-	├-		Day Use Only			-	13	7	1		+-	1	1-	•
	9 2		9		s) Placehed in Good Condition or N	2) Ambient of China	ליוא וענב אמיל	E	Samples were,	1				*				 			┞╴		┤₹					1			+	1	<u></u>	
	2		-	'	+-	9	<u> </u>	•		Liontille Laboratory Use Only	1.		11:		1			10	100 1	1.3	-		٠,				1		22	-	 		S	ŀ
	Temp	Coder	2000 2000 2000 2000 2000 2000 2000 200	Sample Sample	} 	3) Page	5	Pacha		TA CE				1		<u> </u>		ļ	<u> </u>		-		1			3	1	ŧ			+		7	
	Temp. ex. (a)	. (Upon Sample Rect	Sample (3) or N	G	3) Present on Samp	2) Unbroken en Orier	Package (7) or N		1		2::	7 7	-	1 1 2		<u> </u>				-		-								+		1	
l	ြီ င်	Š	Passant Pact	~ 5 ≇	ę Z	3) Present on Sample		2	Tanger Resistant Seel was: 1) Prosent on Outer									ودسوا	3.	7.			7	1.7			1		7	1	+		- 0	
							-		77		11.					1 40 "	. 7		1.		1		1	1 '		•				•			_	

Bechtei Hanfor	d Inc.	CI	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST B99-093-41										
offector Rones Nicison			my Contact into Robsy	Telephon 372-91			9N	Data Turnarous					
roject Designation 200-ZP-2 Passive Soll Vapor	Extraction - Other Solid	Sampli 200	ing Location West					SAF No. B99-093		Air Qualit	7 🗆	45	Days
	01-063		agbaek No. 1562-1		COA R20ZI	2DP60			f Shipment Express		-		
Hoped To YMANDECRA		Offsite	Preperty No.	320	19	4		360 e[L	235 F	755	-81	17	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
POSSIBLE SAMPLE HAZA Samples and not origin radiological controlled total activity associated	area. No		Fretervation	Geel 4C									
sample/samples. Special mahaning add/of s	ال المادية	2	Type of Container	*G									
Cool	47		No. of Container(s) Volume	250mL	-								
	SAMPLE ANAL	.ysts		VSA - 1280A (FCL) (Cuben turnshleride); Melature Chront - 02216									
Sample No.	Matrix *	Sample Date	Sample Time										
3143Y8	OTHER SOLID	2-25-0	2 1135	X							1		124
3143Y9	OTHER SOLID	2-25-0	2 143	X									
B14400	OTHER SOLID	2-75-0	2 1158	X									
B14401-	OTHER SOLID	2-25-0	2 1205	X							 	 	
814402	OTHER SOLID					2/25/02	RI	\ F	1	-		 	} -
CHAIN OF POSSESSIO		Sign/Prin			s	PECIAL INSTR	UCTX	INS	1			 _	Matrix *
Alimnished Bylkanoodd Fran Dill Will Delig Religaisted Bylkanofeed Fran Land A. 37	PaterTime 143	Percing States	A" ALASIUA"	tte/Time	200	** Laboratory may composeds found, ** Caboratory most				A. They are to rep fall hand copy (se		Mogranted	S-Grif SE-Griffren St-Griff S-Ghife
Relimination by Removed From O		Ochectical By Star	39 H	<u>2'-Z(o-</u>	202		Sam	ples store	i in Ref.H) ity on <u>2_</u> R	Ant the 3728			W = Water O-CH A-Air DB-Orom Sellife CB-Deam Ligalia
h	<u> 2-2702 СПЦ-</u> Date/Time	Received By/Sto	Drue 2.27	Me/Time -62- 69- sts/Time	(5"		Coffe	ctor not	vellable to 126/02 fc	relinquish or shipment.			ToTleme We-Wips LoLiquid VoVogendes
Relinquished By/Removed From	Date/Time	Received By/Sto	ed in Da	ate/Time	_				t _r	ے کے۔	56		X-ON#
LABORATORY Received By SECTION	,			Ťi	le			-			'	Dete/Time	<u> </u>
FINAL SAMPLE Disposed MO DISPOSITION	bodts					Dispo	ued By					Date/Tipe	
BHI-EE-011 (12/31/2001)				<u> </u>									

	Bechtel Hanford Inc.	CHAINOF	CUSTOD	Y/SAMPI	OF CUSTODY/SAMPLE ANALYSIS REQUEST	REQUEST	B99-093-41	41 Page 3 of	7
	Zoffection Regree Nickson		Teb	Telephone No. 372-9100		Preject Ceordinater TRENT, SI	Price Code 9N	Data Turnzrano	pome
	roject Designation 200-27-2 Passive Soil Vapor Estraction - Other Solid	Sampling Lecation 200 West				SAF Ne. B99-093	Air Quasity 🛚	45 Days	rys
		Field Lagrand No. EL-1562-1		COA	9940	Method of Shipment Fedoral Express			
IIVOT.	SHAND POST	Offste Projects Na	DID	6142	h	Bill of Latingthir Jill Ng.	*455 -	-8117	
d 1771	POSSIN	Preservation		24 A					<u> </u>
-1	lotal activity associated with sample/samples.	I.	of Container	Q					
	Special Handling and or Storage 7. (6.0)	Na.o	(Containter(s)						
	Lool 4C	Volume		250ml					
1102803041	SAMPLE ANALYSIS		Sec. 398	VOC COMA (TOD.) (COMA (Comacional Malessa (Comaciona Malessa (C					
	Saruplo No. Metrix *	Sample Date Sam	Semple Time						
	B14403 OTHER SOLID 3	-25-02	1214	X					
03T/	B14404 · OTHER SOLED	2-35-02 1	130	, X					
PORV	B14465 OTHER SOUD	2-36-03	230	×					
INCOL									
KA			_						
OTA	CHAIN OF POSSESSION	38 1		٦	SPECIAL INSTRUCTIONS	Ows			Mark *
ABOR.	The state of the s	なががって	といろうと	1 1 1 1 1 1 1 1 1	Laboratory many use me- temporate found.	Laboratory stay use medium level proposition for VOA. They are to report my other tradegraded, composition for Companies, composition for the companies found ** I depressive the companies for the companies of the companies of the companies for the companies of the compa	A. 18ky art to reportingy of		1 to 1 to 1 to 1 to 1 to 1 to 1 to 1 to
3111/	Religiousled By Removed from	ST.	1 J. I	2007	· · · · · · · · · · · · · · · · · · ·				
-F 100/	Retrocition by Namour of Fair Ty or editor Time	The Contract of the Contract o	December	4	Samples stored	Samples stored in Ref.# 1 at the 3728	55	488	Alt F-Oran Solids S-Oran Limite
-mo14	Reinquirted Bylkenoved From Dust Tin	keering Byssupedia	S S S C C C	a G	Cellector not gy	Samples on $Z = \frac{(Z_2/D_c)^2}{(Z_2/D_c)^2}$ samples on $Z = \frac{(Z_2/D_c)^2}{(Z_2/D_c)^2}$ for shipment.		4 5 3 1	To The Land
M.	Religious ished Byf	eceived ByiStored Da	Date/file	2		4		· ×	
: L7: 60	Refuquished By Removed From Date Time	Received ByrSmed fo	Date/Titue			KT2.26.67	.67		
-05	LABORATORY SECTION			Tible				Date/Time	
70-70	FINAL SAMPLE Disposal Method DISPOSITION				Dispused By			Det/Time	
	BHI-EE-011 (12/31/2001)								

04-04-02 09:42am

From-LIONVILLE LABORATORY INCORPORATED

6102803041

T-144 P.11/11 F-597

LIONVILLE LABORATORY INCORPORATED SAMPLE RECEIPT CHECKLIST

CLIENT:

Purchase Order/Project:

DATE: 2-27-02

SAF#) SOW#/Release #: 899-093

Laboratory SDG #: A 2021 077

TE:	ALL ENTRIES MARKED "NO" MUST BE	EXPLAINED I	N THE COMM	ent section	7
1.	Custody seals on coolers or shipping container intact, signed and dated?	PIYes	□ No	□ N/A	D sec Comment
2.	Outside of coolers or shipping containers are free from damage?	Œ Ves	□ No	□ N/A	□ scc Comment
3.	Airbill # recorded?	D-Yes	□ No	□ N/A	, Di see Comment
4.	All expected paperwork received (coc and other client specific: historical data, alpha/beta or other screening data as applicable)? (paperwork sealed in plastic bag and taped to inside lid)	07e	□ No	D N/A	C) see Consment
5.	Sample containers are intact?	a Ves	□ No	□ N/A	🗆 sos Comment
6.	Custody seals on sample containers intact, signed and dated?	ary or	□ No	□ N/A	C see Command
7.	All samples on coc received?	B Ves	□ No	□ N/A	ii sec Comment
8,	All sample label information matches coc?	₽7e;	D No	D N/A	Cl see Conunent
9.	Laboratory QC samples designated on coc? (QC stickers placed on bottles?)	D Yes	Ø₹0°	□ N/A	🗆 see Commen
	Shipment meets LvLI Sample Acceptance Policy? (identify all bontes not within policy. See reverse side for policy)	e Yes	□ No	D N/A	☐ see Comment
	Where applicable, bar code labels are affixed to coc?	□ Yes	Ci No	EFFVA	☐ sec Commen
12.	coc signed and dated?	₽¶a	□ No	□ N/A	12 see Commen
13.	coc faxed or emailed to client?	C Yes	□ No	□ N/A	□ ses Commen
	Project Manager/Client contacted concerning discrepancies? (name/date)	□ Yes	[] No	CI N/A	☐ set Commen

	_			_		
Cool	er #	/t	emp	and	Com	nents:

"ERC-01-063/ 2.6"

Laboratory Sample Custodian:

Laboratory Project Manager: